

CLAIMS

What is claimed is:

1. A system for producing customized audio data, comprising:
a source of an audio data product;
processing resources, coupled to the source of an audio data product, configured to
associate the audio data product with a customer hearing profile for use in production of a
customized audio data product.

2. The system of claim 1, wherein the customer hearing profile comprises
coefficients of a transfer function to transform the audio data product according a hearing
characteristic of a customer.

3. The system of claim 1, wherein the customer hearing profile comprises an
identifier of transfer function to transform the audio data product according a hearing
characteristic of a customer.

4. The system of claim 1, wherein the customer hearing profile comprises an
identifier of a transfer function and coefficients of the identified transfer function to transform
the audio data product according a hearing characteristic of a customer.

5. The system of claim 1, including a machine readable registry of customer hearing
profiles corresponding to registered customers of the audio data product in communication with
data processing resources, and further including resources for reading, modifying and writing
particular customer hearing profiles in the plurality.

6. The system of claim 1, wherein the customer hearing profile includes a value
indicating listening conditions in which the customized audio data product is to be played.

1 7. The system of claim 1, wherein the customer hearing profile includes a value
2 indicating a hearing characteristic of a customer for whom the customized audio data product is
3 to be played.

1 8. The system of claim 1, wherein the customer hearing profile includes a
2 specification of psycho-acoustic characteristics of a customer for whom the customized audio
3 data product is to be played.

1 9. The system of claim 1, wherein the customer hearing profile includes an
2 audiogram characterizing a customer for whom the customized audio data product is to be
3 played.

1 10. The system of claim 1, wherein the customer hearing profile includes software
2 defining a transfer function for producing the customized audio data product.

1 11. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the data processing resources include logic to accept data concerning a
3 customer for whom the customized audio data product is to be played, and to produce a customer
4 hearing profile for the plurality of customer hearing profiles in response to the accepted data.

1 12. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the data processing resources include a network interface, and logic to
3 accept, via the network interface, data concerning a customer for whom the customized audio
4 data product is to be played, and to produce a customer hearing profile for the plurality of
5 customer hearing profiles in response to the accepted data.

1 13. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the data processing resources include a network interface, and logic to
3 accept, via the network interface, data concerning a customer for whom the customized audio
4 data product is to be played, and to modify a customer hearing profile in the plurality of
5 customer hearing profiles in response to the accepted data.

1 14. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the data processing resources include a network interface, and an interface
3 accessible to a user via the network interface to accept data concerning a customer for whom the
4 customized audio data product is to be played, and to produce a customer hearing profile for the
5 plurality of customer hearing profiles in response to the accepted data.

1 15. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the data processing resources include a network interface, and an interface
3 accessible to a user via the network interface to accept data concerning a customer for whom the
4 customized audio data product is to be played, and to modify a customer hearing profile in the
5 plurality of customer hearing profiles in response to the accepted data.

1 16. The system of claim 1, wherein the processing resources include a network
2 interface for connection to a data network, and the source of the audio data product comprises
3 the network interface.

1 17. The system of claim 1, wherein the processing resources include a network
2 interface for connection to a data network, and resources to receive the customer hearing profile
3 via the network interface.

1 18. The system of claim 1, wherein the audio data product comprises pre-recorded
2 audio tracks.

1 19. The system of claim 1, wherein the audio data product comprises pre-recorded
2 audio music tracks.

1 20. The system of claim 1, wherein the audio data product comprises live audio
2 music streams.

1 21. The system of claim 1, wherein the audio data product comprises pre-recorded
2 audio voice tracks.

1 22. The system of claim 1, wherein the audio data product comprises live audio voice
2 streams.

1 23. The system of claim 1, wherein the audio data product comprises live audio
2 telephone data.

1 24. The system of claim 1, wherein the processing resources include a network
2 interface for connection to a data network, and user input comprises an interface accessible via
3 the network interface.

1 25. The system of claim 1, wherein the user input comprises tools by which a user
2 selects an instance of the encoded audio data product, and issues a request for the selected
3 instance.

1 26. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the user input comprises tools by which a user adds a customer hearing
3 profile to the plurality of customer hearing profiles.

1 27. The system of claim 1, including a source of a plurality of customer hearing
2 profiles, and wherein the user input comprises tools by which a user modifies a particular
3 customer hearing profile in the plurality of customer hearing profiles.

1 28. The system of claim 1, wherein the processing resources include logic to produce
2 information about billing for requested audio data products for customers.

1 29. The system of claim 1, wherein the audio data product comprises a digitally
2 encoded product.

1 30. The system of claim 1, wherein the audio data product comprises an analog
2 encoded product.

1 31. The system of claim 1, wherein the audio data product comprises data encoded
2 according to a particular format suitable for playback by audio systems adapted for the particular
3 format, and the customized audio data product comprises data encoded according to the
4 particular format.

1 32. The system of claim 1, wherein the data processing resources include a processor
2 which transforms the audio data product to the customized audio data product using the
3 customer hearing profile, a network interface, and logic for transmitting the customized audio
4 data product to a remote location via the network interface.

1 33. The system of claim 1, wherein the data processing resources include a network
2 interface, and logic for transmitting the audio data product and at least a portion of the customer
3 hearing profile to a remote location via the network interface.

1 34. The system of claim 1, wherein the data processing resources include a network
2 interface, and logic for transmitting at least a portion of the customer hearing profile to a remote
3 location via the network interface for use in transforming the audio data product.

1 35. The system of claim 1, wherein the data processing resources include a processor
2 which transforms the audio data product to the customized audio data product using the
3 customer hearing profile, a memory device to store data on a machine readable medium, and
4 logic for storing the customized audio data product on the machine readable medium.

1 36. The system of claim 1, wherein the processing resources comprise a processor
2 coupled to a device for playing the customized audio data product.

1 37. The system of claim 1, wherein the processing resources comprise a processor
2 coupled to a network, and resources for transmitting the customized audio data product to the
3 customer via the network.

1 38. The system of claim 1, wherein the data processing resources include an interface
2 for reading a hearing profile from a portable data storage device.

1 ~~39.~~ A method for producing customized audio data, comprising:
2 providing an interface for access to an audio data product;
3 receiving a request for the audio data product from a customer;
4 receiving a customer hearing profile associated with the customer; and
5 associating the audio data product with the customer hearing profile for use in production
6 of a customized audio data product.

1 40. The method of claim 39, including:
2 producing the customized audio data product in response to the audio data product and
3 the customer hearing profile, and transmitting the customized audio data product to a remote
4 site.

1 41. The method of claim 39, including:
2 producing the customized audio data product in response to the audio data product and
3 the customer hearing profile, and storing the customized audio data product on a machine
4 readable medium.

1 42. The method of claim 39, including:
2 producing the customized audio data product in response to the audio data product and
3 the customer hearing profile, and transducing the customized audio data product to sound.

1 43. The method of claim 39, including transmitting the audio data product and the
2 customer hearing profile to a remote site.

44. The method of claim 39, wherein the customer hearing profile comprises coefficients of a transfer function to transform the audio data product according a psycho-acoustic characteristic of a customer.

1 45. The method of claim 39, wherein the customer hearing profile comprises an
2 identifier of transfer function to transform the audio data product according a hearing
3 characteristic of a customer.

1 46. The method of claim 39, wherein the customer hearing profile comprises an
2 identifier of a transfer function and coefficients of the identified transfer function to transform
3 the audio data product according a hearing characteristic of a customer.

1 47. The method of claim 39, including providing a machine readable registry of
2 customer hearing profiles corresponding to registered customers of the audio data product, and
3 further including reading, modifying and writing particular customer hearing profiles in the
4 plurality to maintain the registry.

1 48. The method of claim 39, wherein the interface for access to the audio data
2 product comprises a network interface.

1 49. The method of claim 39, including providing a source of a plurality of customer
2 hearing profiles comprising a network interface.

1 50. The method of claim 39, wherein the audio data product comprises pre-recorded
2 audio tracks.

1 51. The method of claim 39, wherein the audio data product comprises pre-recorded
2 audio music tracks.

1 52. The method of claim 39, wherein the audio data product comprises live audio
2 music streams.

1 53. The method of claim 39, wherein the audio data product comprises pre-recorded
2 audio voice tracks.

1 54. The method of claim 39, wherein the audio data product comprises live audio
2 voice streams.

1 55. The method of claim 39, wherein the audio data product comprises live audio
2 telephone data.

1 56. The method of claim 39, including providing an interface accessible via a
2 network interface adapted to receive user input, including the request for the audio data product
3 and an identifier of the customer hearing profile.

1 57. The method of claim 39, including providing tools by which a user selects an
2 instance of the audio data product, and issues a request for the selected instance.

1 58. The method of claim 39, including providing a source of a plurality of customer
2 hearing profiles, and tools by which a user adds a customer hearing profile to the plurality of
3 customer hearing profiles.

1 59. The method of claim 39, including providing a source of a plurality of customer
2 hearing profiles, and tools by which a user modifies a particular customer hearing profile in the
3 plurality of customer hearing profiles.

1 60. The method of claim 39, including providing logic to produce information about
2 billing for requested audio data products for customers.

1 61. The method of claim 39, wherein the audio data product comprises a digitally
2 encoded product.

1 62. The method of claim 39, wherein the audio data product comprises an analog
2 encoded product.

1 63. The method of claim 39, wherein the audio data product comprises data encoded
2 according to a particular format suitable for playback by audio devices adapted for the particular
3 format, and the customized audio data product comprises data encoded according to the
4 particular format.

1 64. The method of claim 39, including providing a source of a plurality of customer
2 hearing profiles, and wherein a customer hearing profile in the plurality of customer hearing
3 profiles includes a value indicating an audio device on which the customized audio data product
4 is to be played.

1 65. The method of claim 39, wherein the customer hearing profile includes a value
2 indicating a hearing characteristic type of a customer for whom the customized audio data
3 product is to be played.

1 66. The method of claim 39, wherein the customer hearing profile includes a
2 specification of psycho-acoustic characteristics of a customer for whom the customized audio
3 data product is to be played.

1 67. The method of claim 39, wherein the customer hearing profile includes an
2 audiogram of a customer for whom the customized audio data product is to be played.

1 68. The method of claim 39, wherein the customer hearing profile includes software
2 defining a transfer function for producing the customized audio data product.

1 69. The method of claim 39, including providing a source of a plurality of customer
2 hearing profiles, accepting data concerning a customer for whom the customized audio data
3 product is to be played, and producing a customer hearing profile for the plurality of customer
4 hearing profiles in response to the accepted data.

70. The method of claim 39, including providing a source of a plurality of customer hearing profiles, accepting data via a network interface concerning a customer for whom the customized audio data product is to be played, and producing a customer hearing profile for the plurality of customer hearing profiles in response to the accepted data.

71. The method of claim 39, including providing a source of a plurality of customer hearing profiles, accepting data via a network interface, concerning a customer for whom the customized audio data product is to be played, and modifying a customer hearing profile in the plurality of customer hearing profiles in response to the accepted data.

72. The method of claim 39, including providing a source of a plurality of customer hearing profiles, providing an interface accessible to a user via a network interface to accept data concerning a customer for whom the customized audio data product is to be played, and producing a customer hearing profile for the plurality of customer hearing profiles in response to the accepted data.

73. The method of claim 39, including providing a source of a plurality of customer hearing profiles, providing an interface accessible to a user via a network interface to accept data concerning a customer for whom the customized audio data product is to be played, and modifying a customer hearing profile in the plurality of customer hearing profiles in response to the accepted data.

~~74.~~ A method for providing customized audio data products, comprising:
 accepting via a data network, machine readable orders from a customer for a particular audio data product;
 associating a hearing profile for the customer with the particular audio data product;
 modifying the particular audio data product according to the hearing profile to produce a customized audio data product; and
 transmitting via a data network, a customized audio data product to the customer.

1 75. The method of claim 74, wherein the customized audio data product comprises at
2 least a portion of the hearing profile, and the particular audio data product for transformation
3 according to the hearing profile at a remote site.

1 76. The method of claim 74, wherein the customized audio data product comprises a
2 transformation according to the hearing profile of the particular audio data product.

1 77. The method of claim 74, including maintaining a registry of hearing profiles, and
2 the step of associating a hearing profile for the customer with the particular audio data product
3 includes retrieving the hearing profile from the registry.

1 78. The method of claim 77, including providing tools accessible via a network for
2 gathering information about hearing characteristics of customers, and modifying hearing profiles
3 in the registry in response to the information.

1 79. The method of claim 77, including providing tools accessible via a network for
2 gathering information about hearing characteristics of customers, and modifying hearing profiles
3 in the registry in response to the information according to an optimization modeling process.

1 80. The method of claim 74, wherein the particular audio data product comprises pre-
2 recorded audio tracks.

1 81. The method of claim 74, wherein the particular audio data product comprises pre-
2 recorded audio music tracks.

1 82. The method of claim 74, wherein the particular audio data product comprises live
2 audio music streams.

1 83. The method of claim 74, wherein the particular audio data product comprises pre-
2 recorded audio voice tracks.

1 84. The method of claim 74, wherein the particular audio data product comprises live
2 audio voice streams.

1 85. The method of claim 74, wherein the particular audio data product comprises live
2 audio telephone data.

1 86. The method of claim 74, including providing an interface accessible via a
2 network interface adapted to receive user input, including the request for the particular audio
3 data product and an identifier of the customer hearing profile.

1 87. The method of claim 74, including providing tools by which a user selects an
2 instance of the particular audio data product, and issues a request for the selected instance.

1 88. The method of claim 74, including providing a source of a plurality of customer
2 hearing profiles, and tools by which a user adds a customer hearing profile to the plurality of
3 customer hearing profiles.

1 89. The method of claim 74, including providing a source of a plurality of customer
2 hearing profiles, and tools by which a user modifies a particular customer hearing profile in the
3 plurality of customer hearing profiles.

1 90. The method of claim 74, including providing logic to produce information about
2 billing for particular audio data products for customers.

1 91. The method of claim 74, wherein the particular audio data product comprises a
2 digitally encoded product.

1 92. The method of claim 74, wherein the particular audio data product comprises an
2 analog encoded product.

1 93. The method of claim 74, wherein the particular audio data product comprises data
2 encoded according to a particular format suitable for playback by audio devices adapted for the
3 particular format, and the customized audio data product comprises data encoded according to
4 the particular format.

1 94. The method of claim 74, wherein the hearing profile includes a value indicating
2 listening conditions in which the customized audio data product is to be played.

1 95. The method of claim 74, wherein the hearing profile includes a value indicating a
2 hearing characteristic type of a customer for whom the customized audio data product is to be
3 played.

1 96. The method of claim 74, wherein the hearing profile includes a specification of
2 psycho-acoustic characteristics of a customer for whom the customized audio data product is to
3 be played.

1 97. The method of claim 74, wherein the hearing profile includes an audiogram of a
2 customer for whom the customized audio data product is to be played.

1 98. The method of claim 74, wherein the hearing profile includes software defining a
2 transfer function for producing the customized audio data product.

1 ~~99.~~ A method for providing customized audio data products, comprising:
2 storing a machine readable hearing profile for a customer;
3 accepting via a data network, machine readable orders from the customer for a particular
4 audio data product;
5 associating the hearing profile for the customer with the particular audio data product;
6 modifying the particular audio data product according to the hearing profile to produce a
7 customized audio data product;
8 delivering the customized audio data product to the customer;
9 accepting feedback from the customer concerning the customized audio data product; and

10 modifying the hearing profile in response to the feedback.

1 100. The method of claim 99, including:
 2 providing input tools for accepting input data concerning a hearing profile for the
 3 customer, and producing the machine readable hearing profile in response to the input data.

1 101. The method of claim 99, including:
 2 providing a graphical user interface, accessible by the customer, for accepting input data
 3 concerning a hearing profile for the customer, and producing the machine readable hearing
 4 profile in response to the input data.

1 102. The method of claim 99, including:
 2 providing a graphical user interface, accessible by the customer via a data network, for
 3 accepting input data concerning a hearing profile for the customer, and producing the machine
 4 readable hearing profile in response to the input data.

1 103. The method of claim 99, including:
 2 providing input tools for accepting input data characterizing the feedback, and modifying
 3 the machine readable hearing profile in response to the input data.

1 104. The method of claim 99, including:
 2 providing a graphical user interface, accessible by the customer, for accepting input data
 3 characterizing the feedback, and modifying the machine readable hearing profile in response to
 4 the input data.

1 105. The method of claim 99, including:
 2 providing a graphical user interface, accessible by the customer via a data network, for
 3 accepting input data characterizing the feedback, and modifying the machine readable hearing
 4 profile in response to the input data.

106. The method of claim 99, wherein the step of modifying comprises applying an optimization modeling process to the hearing profile.

107. The method of claim 99, including maintaining a database including a plurality of machine readable hearing profiles for a corresponding plurality of customers, and wherein the step of modifying comprises applying an optimization modeling process to the hearing profile in response to the feedback and to the database.

108. The method of claim 99, including determining listening conditions relevant to playback of the customized audio data product, and wherein the step of modifying is responsive to the determined listening conditions.

109. The method of claim 99, including determining a type of delivery for the customized audio data product, and wherein the step of delivering is responsive to the determined type of delivery.

110. The method of claim 99, including determining a type of delivery for the customized audio data product, and wherein the step of modifying is responsive to the determined type of delivery.

111. A method for providing customized audio data products, comprising:
 delivering a particular audio data product;
 associating a hearing profile with the particular audio data product;
 modifying the particular audio data product according to the hearing profile to produce a customized audio data product.

112. The method of claim 111, wherein the step of associating a hearing profile with the particular audio data product includes retrieving the hearing profile from a portable memory device.

1 113. The method of claim 111 including maintaining a registry of hearing profiles, and
2 the step of associating a hearing profile for the customer with the particular audio data product
3 includes retrieving the hearing profile from the registry.

1 114. The method of claim 113, including providing tools accessible via a network for
2 gathering information about hearing characteristics of customers, and modifying hearing profiles
3 in the registry in response to the information.

1 115. The method of claim 113, including providing tools accessible via a network for
2 gathering information about hearing characteristics of customers, and modifying hearing profiles
3 in the registry in response to the information according to an optimization modeling process.

1 116. The method of claim 111, wherein the particular audio data product comprises
2 pre-recorded audio tracks.

1 117. The method of claim 111, wherein the particular audio data product comprises
2 pre-recorded audio music tracks.

1 118. The method of claim 111, wherein the particular audio data product comprises
2 live audio music streams.

1 119. The method of claim 111, wherein the particular audio data product comprises
2 pre-recorded audio voice tracks.

1 120. The method of claim 111, wherein the particular audio data product comprises
2 live audio voice streams.

1 121. The method of claim 111, wherein the particular audio data product comprises
2 live audio telephone data.

1 122. The method of claim 111, including providing tools by which a user selects an
2 instance of the particular audio data product, and issues a request for the selected instance.

1 123. The method of claim 111, including providing a source of a plurality of customer
2 hearing profiles, and tools by which a user adds a customer hearing profile to the plurality of
3 customer hearing profiles.

1 124. The method of claim 111, including providing a source of a plurality of customer
2 hearing profiles, and tools by which a user modifies a particular customer hearing profile in the
3 plurality of customer hearing profiles.

1 125. The method of claim 111, wherein the particular audio data product comprises a
2 digitally encoded product.

1 126. The method of claim 111, wherein the particular audio data product comprises an
2 analog encoded product.

1 127. The method of claim 111, wherein the particular audio data product comprises
2 data encoded according to a particular format suitable for playback by audio devices adapted for
3 the particular format, and the customized audio data product comprises data encoded according
4 to the particular format.

1 128. The method of claim 111, wherein the hearing profile includes a value indicating
2 listening conditions in which the customized audio data product is to be played.

1 129. The method of claim 111, wherein the hearing profile includes a value indicating
2 a hearing characteristic type of a customer for whom the customized audio data product is to be
3 played.

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